LATE EFFECTS/QUALITY OF LIFE

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LATE EFFECTS IN HEMATOPOIETIC CELL TRANSPLANT RECIPIENTS WITH ACQUIRED SEVERE APLASTIC ANEMIA: A REPORT FROM THE LATE EFFECTS WORKING COMMITTEE OF THE CENTER FOR INTERNATIONAL BLOOD AND MARROW TRANSPLANT RESEARCH (CIBMTR)

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Objective: With improvements in hematopoietic cell transplantation (HCT) for severe aplastic anemia (SAA), there is a growing population of SAA survivors of HCT. However, there is a paucity of information regarding late effects in SAA HCT survivors. We analyzed the burden of malignant and non-malignant late effects in HCT survivors with acquired SAA.

Methods: A descriptive analysis of 1,718 patients post-HCT for acquired SAA between 1995-2006 reported to the CIBMTR was conducted. Cumulative incidences (CI) of selected late effects are reported for among "condition-free" (i.e. survivors without a previous diagnosis of the specified late effect) HCT survivors with SAA.

Results: One-year overall survival for the recipients of related donor HCT was 83% (80-85) and 62% (58-66) for the recipients of unrelated donor HCT. Of the HCT recipients, 1176 (68.5%) patients with a median age at HCT of 20 years (<1-65) utilized a related donor and 542 (31.5%) patients with a median age at HCT of 20 years (<1-67) utilized an unrelated donor. The median interval from diagnosis to transplant was 3 months (<1-348) for related donor HCT and 14 months (1-318) for unrelated donor HCT. Radiation (of any type) was utilized in 6% and 78% of related and unrelated donor HCT cases; respectively. Cy-TBI (68%) was a commonly utilized conditioning regimen for unrelated donor HCT. The median follow-up is 70 months (1-160) and 67 months (3-182) for related and unrelated donor HCT; respectively. The 2-year CI of chronic GVHD was 20% (18-22) and 37% (32-41) in related and unrelated donor HCT; respectively. Table 1 demonstrates that among 1-year condition-free survivors, the CI of late effects is greater among unrelated donor HCT survivors and continues to increase.

Conclusion: These findings suggest that HCT survviors with SAA are a robust and healthy group in general. However, subgroups of patients undergoing HCT for SAA are at-risk for late effects and must be educated about and should be monitored for late effects. Subgroups of survivors may be at-risk group for a greater burden of specific late effects. Ongoing analyses in our cohort will explore selected risk-factors for late effects after HCT for SAA.

Table 1. Interval specific cumulative incidence of select late effects among 1-year condition free survivors following related and unrelated donor HCT for acquired SAA between 1995 and 2006 reported to the CIBMTR

	Related Donor		Unrelated Donor	
Health conditions post transplant	N (at risk)	Cumulative Incidence % (95% CI)	N (at risk)	Cumulative Incidence % (95% CI)
Strokes/Seizures				
Over next 2 years	707	1.7 (0.9-2.7)	283	1.3 (0.3-2.8)
Over next 5 years	416	1.8 (1.0-2.9)	118	2.8 (1.2-5.1)
Gonadal Dysfunction				
Over next 2 years	709	2.6 (1.6-3.8)	273	6.2 (3.8-9.1)
Over next 5 years	419	3.0 (2.0-4.3)	108	10.5 (7.3-14.3)
Renal Failure				
Over next 2 years	715	1.1 (0.5-1.9)	287	1.9 (0.7-3.6)
Over next 5 years	425	1.4 (0.7-2.3)	127	2.4 (0.9-4.5)
Avascular Necrosis				
Over next 2 years	724	1.4 (0.7-2.3)	276	3.2 (1.5-5.4)
Over next 5 years	426	1.8 (1.0-2.8)	117	6.3 (3.6-9.7)
Cataracts				
Over next 2 years	734	0.6 (0.2-1.2)	284	2.2 (0.9-4.1)
Over next 5 years	433	1.1 (0.5-1.9)	118	5.1 (2.9-8.0)
Growth Disturbance				
Over next 2 years	735	0.2 (0.0-0.7)	286	1.9 (0.7-3.6)
Over next 5 years	433	0.5 (0.1-1.2)	113	7.2 (4.4-10.7)
Hypothyroidism				
Over next 2 years	731	0.7 (0.3-1.4)	286	0.6 (0.1-1.8)
Over next 5 years	432	1.2 (0.5-2.1)	119	5.5 (2.8-9.0)
Solid Tumors				
Over next 2 years	820	0.6 (0.2-1.1)	276	0.7 (0.1-1.9)
Over next 5 years	528	0.7 (0.2-1.3)	121	1.4 (0.4-3.0)

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INFLUENCE OF METABOLIC TRAITS AND LIFESTYLE FACTORS ON CARDIOVASCULAR DISEASE AFTER HEMATOPOIETIC CELL TRANSPLANTATION

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Purpose: To determine the influence of concurrent metabolic conditions and lifestyle factors on the risk of cardiovascular (CV) disease following hematopoietic cell transplantation (HCT).

Methods: HCT survivors treated at the Fred Hutchinson Cancer Research Center from 1970-2010 were surveyed with respect to selected serious CV outcomes, related metabolic conditions requiring medications, obesity, lifestyle factors (smoking, physical activity, diet), and family history beginning in July 2010 (ongoing) using previously validated self-report questionnaires.

Results: Among 1489 respondents (47% female, median age 57 years, median time since HCT 9 years, 68% allogeneic, 40% with history of chronic graft versus host disease (GVHD)), the incidence of serious CV outcomes following HCT included cardiomyopathy (3.4%), ischemic heart disease (4.4%), and cerebrovascular disease (4.9%). The prevalence of related metabolic conditions included hypertension (33.8%), dyslipidemia (34.4%), and diabetes (11.8%). 32.8% of patients were currently overweight and 16.4% obese, while 32.1% had a prior history of smoking and 6.3% reported current smoking. In multivariate analyses adjusting for GVHD status, hypertension was associated with an increased likelihood of cardiomyopathy (OR 1.9, 95% CI 1.0-3.5), while dyslipidemia was associated with increased likelihoods of ischemic heart disease (OR 3.9, 95% CI 2.1-7.2) and cerebrovascular disease (OR 2.0, 95% CI 1.2-3.4). Diabetes, obesity, and smoking (prior or current) were not independently associated with any of these serious CV outcomes. Among respondents free of serious CV disease, healthier diets (ORs 0.5-0.7; $p<0.05$)